attention it is desired to point out several improvements in the lime-water method, as described in *Journal of the American Chemical Society, 26,* p. 661.

It has been found that to "draw off" the supernatant liquid and boil it to a volume of about 5 c.c. may lead to errors of 200 or 300 parts per million, because traces of soluble alkaline lime salts may not diffuse into the upper portion of the supernatant liquid. The method has been modified to read

> . . . allow to stand over night, with occasional shaking, shake thoroughly and filter immediately through a neutral filter paper (S. & S. 588 is good) rejecting the first 10 to 15 c.c., or until the filtrate is quite or nearly clear, place in a Jena (Nonsol or Pyrex, or other insoluble glass may be used) beaker. . . .

I have realized from the first that the lime-water method gives high results on soils very rich in organic matter. One of the reasons for this was recently observed by Mr. Holman, of this laboratory. It is that the characteristic pink color developed when phenolphthalein is added to an alkaline solution is often almost immediately destroyed rather than masked in solutions containing much dissolved organic matter.

The error which may be thus introduced is lessened but not entirely eliminated by boiling down the filtrate to about 10 c.c. and adding, watching carefully meanwhile for the temporary pink color, the phenolphthalein a drop at a time.

This is not the only cause for the high results obtained on soils rich in organic matter. Other causes, modifications to eliminate them and improvements simplifying and shortening the method, will be presented at an early date.

F. P. Veitch

Washington, D. C.

THE SURVIVAL OF BEAT IN THE REMOVED HEART OF THE SNAPPING TURTLE

The aim of the present note is to place on record the details of the survival of pulsations in the heart of the snapping turtle. A specimen having a shell-length of about twelve inches was captured in the vicinity of Kingston by one of the boys of the community. For three days it was kept in a tub without food and on the fourth was killed and dressed "to make a stew." The writer was not present at the killing which occurred at 9:45 in the morning. The heart was brought to the laboratory at 10:45, the boy being interested in the fact that the beating continued. At the time the writer first observed the specimen it was lying in a small pool of blood in a saucer with the vessels cut short. It was then beating strongly at the rate of eleven times per minute. At 11:35 the blood was washed out of the saucer and normal salt solution added to partly cover the organ. The further record of the beats per minute was made as follows, the room temperature being 73° F.

9:45	turtle killed.
10:45	rate 11 beats.
11:05	rate 12 beats.
11:35	rate 12 beats.
12:30	rate 16 beats.
1:00	rate 18 beats.
1:30	rate 18 beats.
2:00	rate 18 beats.
2:30	rate 18 beats.
3:00	no contractions.

From the above it will be observed that the contractions continued at a slightly increasing rate for a period of about six hours. At the end of this time mechanical stimulus failed to produce further contractions.

Philip B. Hadley

Kingston, R. I.,
June 27, 1916

QUOTATIONS

SCIENTIFIC SOCIETIES AND THE GOVERNMENT

The letter in the *Times* of Professor E. G. Conklin, of Princeton, pointing out that no president has given such generous recognition to the National Academy of Sciences and other scientific bodies as Wilson, deserves larger attention than it will get. It occurs to few that the government could make profitable use of scientific auxiliaries. Though the National Academy of Sciences was authorized fifty-three years ago by Congress, in response to a demand by Alexander Bache, superintendent of the Coast Survey, for an official organization for research; though it was launched with a membership including Agassiz, Davis,

Gray, Dana, Guyot, Peirce, Joseph Henry and Hilgard; and though it has numbered the best American scientists since, it has made little popular impression. Professor Conklin states that Wilson was the first president to ask its advice in appointing an expert—following its recommendation in choosing the chief of the Weather Bureau. Again, though the American Society of Naturalists and the American Society of Zoologists had appealed in vain to McKinley to appoint a trained man commissioner of fisheries, Wilson not only promised to do so, but named the man they recommended. He has also followed expert advice in choosing the chief chemist of the Agricultural Department and the chief of the Bureau of Mines; and has entrusted to the National Academy the important work of establishing a national research council.

The fact that the National Academy of Sciences has lagged behind the similar academies of Europe is traceable to various causes. One lies in the huge extent of our country, making difficult the frequent assembling of scientists at Washington, as they easily gather at London, Paris and Berlin. Our scientists are usually connected with universities scattered over the whole land, while in Europe the most important seats of learning are often situated at the capitals. But a main cause is clearly the lack of government support. The academy has had to rely for its work on money given by Bache, Agassiz, C. B. Comstock, Wolcott Gibbs, Apthorp Gould, Sir John Murray, and others, totalling only about $200,000—part of this to be devoted to prizes. It has had no home, and its building fund would disgrace any vigorous college fraternity. It has not received the number of commissions for the government—to be executed with government funds—that it might very well have had; and in some years has been almost inactive. It was once given such tasks as to suggest a means for restoring the Declaration of Independence, to canvass the various materials for cent coins, to show how to prevent counterfeiting, to offer a tariff classification of wools, to study glucose manufacture: tasks that would now be handed over to the government's own scientific bureaus. Only recently has it seemed that it may soon assume its proper place as a chief federal agency in many lines of research.

The Royal Society of Britain and the French Academy of Sciences are great institutions that this country can not at present equal. For two centuries they have been the centers of progress in research. The first had its period of weak governmental support, when it was too poor to publish Newton's "Principia," but it now has $20,000 a year and special grants, its own quarters, and the building formerly known as its workshop, now as the Royal Institution. Here have worked Faraday, Davy, Young, Tyndall, Dewar, Sir Joseph Thomson and others, many as brilliant in the lecture room as in research. It has supplied money and instruments to scientific expeditions all over the world, has assisted the self-governing dominions and India, and has performed such special tasks as that allotted the Sleeping Sickness Commission. The French Institute, set firmly on its feet by Colbert and Napoleon—the latter was a member—has had names as great, and at one period surpassed the best days of the Royal Society, with Laplace, La Grange, Becquerel, Fourier, Regnault, Gay-Lussac, Berthollet, Cuvier, Lamarck and Saint-Hilaire on its rolls. Our National Academy would do well if some day it rivalled that of Berlin, with its large new building, ample funds and tradition of consistently maintained research into Greek and Latin inscriptions, the Prussian law, and the history of the fixed stars; or if it became as important to America as the Stockholm Academy, which distributes the Nobel prizes, is to Sweden, or that at Petrograd to Russia. It must be given more of such work as it has had in reporting on a national board of health, on a plan for treating the national forests, on the survey of the territories, or on Philippine exploration. And it must somehow find funds to enable it to carry on extended researches in one field for years, and to undertake publishing, as do the European bodies.

If the National Academy were often consulted by the president about scientific appointments, we should only be following a

precedent long established in France. Whenever a professorship falls vacant there in one of the national universities, or the directorship of an observatory, or a similar post, the Academy of Sciences is asked to recommend a first and second choice to the proper officer —as the minister of public instruction. Our executives will never surrender a wide latitude of choice, but President Wilson has set a good example. So, too, his action in asking the academy to study the slides at Panama, and to form a body which should bring all the research agencies of the country into a position to cooperate with each other and the government in time of need, indicates a praiseworthy intention to heighten the prestige of the academy.—New York *Evening Post.*

SCIENTIFIC BOOKS

Meteorites, Their Structure, Composition and Terrestrial Relations. By Oliver Cummings Farrington, Ph.D., Curator of Geology, Field Museum, Chicago. Published by the author.

The mystery attendant upon the fall of a stone-like or metallic body upon our earth from the "realms of space" early attracted the attention of students of natural phenomena and aroused the curiosity and perhaps superstition of the uneducated. Singularly enough, however, the literature upon so fascinating a subject has, so far as the English-reading layman is concerned, for a long time been very unsatisfactory, consisting mainly of brief papers descriptive of individual occurrences, or catalogues of collections. The well-known books of Kirkwood and Lockyer treat the subject mainly from an astronomical standpoint. Fletcher's "Introduction to the Study of Meteorites," a British Museum publication, has been by far the most satisfactory treatise, but is scarcely known outside of the libraries of the specialist. In other languages we have Meunier's handbooks and treatises based on the collections of the Paris Museum, Brezina's on those of Vienna, and lastly Cohen's comprehensive "Meteoritenkunde," a work altogether too detailed and technical for the general reader. The book of Dr. Farrington, here under review, comes, therefore, opportunely into a field where there is plenty of room. In an octavo volume of 225 pages is given as fully as space will permit, a summation of present knowledge regarding *Meteorites, their structure, composition and terrestrial relations.* The leading chapters deal with the phenomena and time of falls, the size and form of individual meteorites, their structural features, chemical and mineralogical composition, origin and classification, with a final chapter on the principal public collections. From this last it appears that the collections of the British Museum, those of Vienna and Paris abroad, and of the Field Museum in Chicago, comprise each representatives of some 600 out of the known 634 falls and finds, the rapid growth of the last named collection being due to the acquisition of the Ward-Coonley collection in 1912. The national collections at Washington, numbered, as shown by a recent "Handbook and Descriptive Catalogue," 412 falls and finds (since increased to some 432), including the recently acquired "Shepard Collection." This wide distribution of the material from individual falls is worthy of more than passing notice. Prior to the eighteenth century, it seems such objects were rarely preserved in museums, or if so preserved, were hidden away, the custodians fearing to make themselves ridiculous by even acquiescing in their supposed ultra-terrestrial origin, and it was not until the publication of the works of Chladni in 1794 and 1819 that their accumulation for study began upon a truly scientific basis.

The earliest known undoubted meteorites still preserved are those of Elbogen, Bohemia, and Ensisheim, Upper Alsace, Germany, dating back to 1400 and 1492. These have been broken up and scattered throughout public and private museums the world over, Wulfing's catalogue showing that fragments of the Ensisheim stone are to be found in 66 different collections. It is sometimes questionable if the almost fanatic desire on the part of private collectors to secure fragments, however small, has not retarded rather than helped the cause, since it has not merely re-